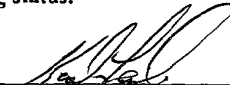


JC05 Rec'd PCT/PTO 05 SEP 2007

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|--|--|---|--|
| FORM PTO-1390<br>(REV 12-29-99)  |  | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTORNEY'S DOCKET NUMBER<br>576P040                          |
| TRANSMITTAL LETTER TO THE UNITED STATES<br>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br>CONCERNING A FILING UNDER 35 U.S.C. 371   |  |   | U.S. APPLICATION NO. (If known, see 37 CFR 1.5)<br>09/914878 |
| INTERNATIONAL APPLICATION NO.<br>PCT/JP00/01567  | INTERNATIONAL FILING DATE<br>15 March 2000 | PRIORITY DATE CLAIMED<br>19 March 1999                  |  |
| TITLE OF INVENTION URETHANE OLIGOMER, RESIN COMPOSITIONS THEREOF AND CURED ARTICLE THEREOF   |  |   |  |
| APPLICANT(S) FOR DO/EO/US Satoshi Mori, Minoru Yokoshima, Noriko Kiyoyanagi, Yuichiro Matsuo and Hiroo Koyanagi  |  |   |  |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:  |  |   |  |
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input checked="" type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol> |  |   |  |
| Items 11. to 16. below concern document(s) or information included:  |  |   |  |
| <ol style="list-style-type: none"> <li>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>13. <input type="checkbox"/> A FIRST preliminary amendment.<br/><input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</li> <li>14. <input type="checkbox"/> A substitute specification.</li> <li>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>16. <input checked="" type="checkbox"/> Other items or information: <ol style="list-style-type: none"> <li>1. Copy of the International Search Report;</li> <li>2. Copy of Form PCT/IB/308 and</li> <li>3. Copy of Form PCT/IB/304.</li> </ol> </li> </ol>  |  |   |  |

|   |              |                               |           |                           |  |
|---|--------------|-------------------------------|-----------|---------------------------|--|
| U.S. APPLICATION NO. (if known, see 37 CFR 1.48)  |              | INTERNATIONAL APPLICATION NO. |           | ATTORNEY'S DOCKET NUMBER  |  |
| 09/914878   |              | PCT/JP00/01567                |           | 576P040                   |  |
| 17. <input checked="" type="checkbox"/> The following fees are submitted:<br><b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b><br>Neither international preliminary examination fee (37 CFR 1.482)<br>nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO<br>and International Search Report not prepared by the EPO or JPO ..... \$ 1000<br>International preliminary examination fee (37 CFR 1.482) not paid to<br>USPTO but International Search Report prepared by the EPO or JPO ..... \$ 860<br>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but<br>international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$ 710<br>International preliminary examination fee paid to USPTO (37 CFR 1.482)<br>but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$ 690<br>International preliminary examination fee paid to USPTO (37 CFR 1.482)<br>and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$ 100<br><b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b> |              |                               |           | CALCULATIONS PTO USE ONLY |  |
|   |              |                               |           |                           |  |
| Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30<br>months from the earliest claimed priority date (37 CFR 1.492(e)).  |              |                               |           | \$ -                      |  |
| CLAIMS  | NUMBER FILED | NUMBER EXTRA                  | RATE      |                           |  |
| Total claims  | 21 - 20 =    | 1                             | X \$18.00 | \$ 18.00                  |  |
| Independent claims  | 2 - 3 =      | 0                             | X \$ 80.  | \$ 0                      |  |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable)   |              |                               | +\$270    | \$ 270.00                 |  |
| <b>TOTAL OF ABOVE CALCULATIONS =</b>  |              |                               |           | <b>\$ 1148.00</b>         |  |
| Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement<br>must also be filed (Note 37 CFR 1.9, 1.27, 1.28).   |              |                               |           | \$ -                      |  |
| <b>SUBTOTAL =</b>   |              |                               |           | <b>\$ 1148.00</b>         |  |
| Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30<br>months from the earliest claimed priority date (37 CFR 1.492(f)).   |              |                               |           | \$ -                      |  |
| <b>TOTAL NATIONAL FEE =</b>   |              |                               |           | <b>\$ 1148.00</b>         |  |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be<br>accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property .   |              |                               |           | \$ 40.00                  |  |
| <b>TOTAL FEES ENCLOSED =</b>  |              |                               |           | <b>\$ 1188.00</b>         |  |
|   |              |                               |           | Amount to be:             |  |
|   |              |                               |           | refunded                  |  |
|   |              |                               |           | charged                   |  |
|   |              |                               |           | \$                        |  |
| a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1148.00 &amp; 40.00</u> to cover the above fees is enclosed.  |              |                               |           |                           |  |
| b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.<br>A duplicate copy of this sheet is enclosed.  |              |                               |           |                           |  |
| c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any<br>overpayment to Deposit Account No. <u>14-0930</u> . A duplicate copy of this sheet is enclosed.  |              |                               |           |                           |  |
| NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR<br>1.137(a) or (b)) must be filed and granted to restore the application to pending status.  |              |                               |           |                           |  |
| SEND ALL CORRESPONDENCE TO:   |              |                               |           |                           |  |
| Kevin S. Lemack<br>Nields & Lemack<br>176 E. Main Street<br>Westboro, MA 01581  |              |                               |           |                           |  |
| <br>SIGNATURE   |              |                               |           |                           |  |
| Kevin S. Lemack<br>NAME   |              |                               |           |                           |  |
| <u>32,579</u><br>REGISTRATION NUMBER  |              |                               |           |                           |  |

DESCRIPTION

URETHANE OLIGOMER, RESIN COMPOSITIONS THEREOF AND CURED ARTICLE  
THEREOF

Technical Field

The present invention relates to a water-soluble resin and a resin composition that are ready to be cured by active energetic ray, and a cured article thereof. The present invention is applicable for a coating agent, a printing ink, a photoresist, a adhesive and an printing material.

Background Art

For promoting energy conservation or VOC prevention, active energetic ray such as ultraviolet ray has widely been applied for a plastic curing technology. As the VOC prevention recently asks the solubilization of plastics, so a suitable water-soluble resin is especially desired to develop.

For manufacturing a printed circuit board, a liquid or film state of photosensitive resin composition has been used. For example, the composition is used as a resist to etching the copper foil of a copper laminated layer board, serving for the limitation of soldering positions and the protection of circuits on the printed circuit board. There is a film state of printed circuit board, called the FPC ( the flexible printed